



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/576,656	05/22/2000	Pierre Zakarauskas	11336/622	3288

7590 11/17/2004  
Meredith Martin Addy, Esq.  
BRINKS HOFER GILSON & LIONE  
P.O. Box 10395  
Chicago, IL 60610

EXAMINER

LAO, LUN S

ART UNIT PAPER NUMBER

2643

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

9/3

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/576,656		ZAKARAUSKAS ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Lun-See Lao		2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Introduction***

1. This is response to the amendment filed 09-09-2004. Claims 1-18 are pending.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1,3 5-9, 11-13 and 17-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Nevins (US PAT. 5,949,886) in view of Park et al. (US PAT. 5,590,241) and Kodama (US PAT. 6,249,275).

Consider claim 1, Nevins teaches an acoustic signal monitoring system, comprising:

a time series analyzer (see fig.1, 16) configured to determine and inherently provide a continuous feedback (see fig.2a step 62,64) to a user (see figs. 5 and 7-11), said analyzer also enabling gain adjustment to prevent signal clipping or amplifier overloading (see col.5 line 7-63); but Nevins does not clearly teach about an on/off state of a microphone to a user and a parameter adjustment element operating to calculate frequency domain parameters, said frequency domain parameters providing information about placement of the microphone with respect to an audio source, where said

Art Unit: 2643

information enables the user to take appropriate actions to enhance operation of an audio system.

However, Park teaches a parameter adjustment element (see fig.1, 37) operating to calculate frequency domain parameters, said frequency domain parameters providing information about placement of the microphone with respect to an audio source, where said information enables (such as unvoice and voice) the user to take appropriate actions to enhance operation of an audio system (see col.4 lines 10-col.5 line29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Park into Nevins to provide a speech processing system which works well in extremely noisy environments and an adaptive filter which has better responsiveness are needed.

On the other hand, Kodama teaches a microphone about on/off state to a user (see col. 5 line 25-col.6 line 39).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Nevins into Kodama into Nevins as modified by Park to provide a detects the microphone on/off state for friendly use.

Consider claim 3, Nevins teaches a method of adjusting the quality of the acoustic signal comprising:

performing frequency domain transform of said acoustic signal (see figs, 3-4 and 6);

computing signal to noise ratio of said acoustic signal (see figs. 3-4 and 6); and

continuously providing a feedback (see fig.2a, steps 62,64) based on said signal to noise ratio (see col.5 lines 7-63), but Nevins does not clearly teach performing frequency domain transform of said acoustic signal.

However, Park teaches a performing frequency domain transform of said acoustic signal (see col.4 lines 10-col.5 line29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Park into Nevins to provide a speech processing system for enhancing speech signal in an noisy environments.

Consider claims 5-6, Nevins teaches the method further comprising:

the method further comprising of using said computed signal to noise ratio to calculate gain adjustment for the amplifier (see figs.5 and 7-11 col.5 lines 7-63); and the method of said signal to noise ratio provides information about placement of a microphone with respect to an audio source (see col.5 lines 43-54).

Consider claim 7, Nevins teaches an apparatus comprising a computer-readable storage medium having executable instructions that enable the computer to:

perform frequency domain transform of an acoustic signal (see figs., 3-4 and 6);  
compute signal to noise ratio of said acoustic signal (see figs.5 and 7-11); and  
continuously provide a feedback (see fig.2a, step, 62, 64) based on said signal to noise ratio (see col.5 line 7-col.6 line 46); but Nevins does not clearly teach performing frequency domain transform of said acoustic signal.

However, Park teaches a performing frequency domain transform of said acoustic signal (see col.4 lines 10-col.5 line29).

Art Unit: 2643

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Park into Nevins to provide a speech processing system for enhancing speech signal in an noisy environments.

Consider claim 8 Park teaches the acoustic signal monitoring system of further comprising:

a frequency transform unit (see fig.1, 37) configured to transform incoming acoustic signal into frequency domain for calculation in said parameter adjustment element (see col. 4 lines 10-col.5 line 29).

Consider claims 9, 13, Nevins teaches the acoustic signal monitoring system of further comprising:

performing puff (silence) detection using said calculated said signal to noise ratio; and advising the user to adjust placement of the microphone that generates said signal (see col.5 lines 7-63).

Consider claims 11-12, Nevins teaches the apparatus of a computer-readable storage medium further having executable instructions that enable the computer to:

use said computed signal to noise ratio to calculate gain adjustment for the amplifier (see fig.1, 18 and col.5 line 7-col.6 line 45); and the apparatus of the signal to noise ratio provides information about placement of a microphone with respect to an audio source (see col.5 line 7-63).

Consider claim 17, Nevins teaches the apparatus of a computer readable storage medium further having executable instructions that enable the computer to:

performing detection of signal clipping (see col.4 line 25-col.5 line 35); and the acoustic signal monitoring system of the time series analyzer (see fig.1, 16) configured to inherently determine said on/off ( such as error condition, notified to check that microphone is properly connected to the sound card or microphone works correctly, and see figs. 5 and 7-11) state by comparing signal from said microphone to a threshold value (see col.5 lines 7-63).

Consider claim 18 Park teaches the acoustic signal monitoring system of the frequency domain (see fig.1, 37) parameters is a frequency domain signal to noise ratio (see col.4 line 10 –col.5 line 29).

4. Claims 2,4 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nevins (US PAT. 5,949,886) in view of Kodama (US PAT. 6,249,275).

Consider claim 14, Nevins teaches an apparatus comprising a computer-readable storage medium having executable instructions that enable the computer to:

determine information about an error condition of a microphone (see figs 5 and 7-11) by comparing an acoustic signal to a threshold value to determine the error condition (notified to check that a microphone is properly or not) of a microphone (see col.2 lines 38-45); and

continuously provide feedback (see fig.2a, steps 62, 64) based on said information (see col.4 lines 23-59), but Nevins does not clearly teach determine information about an on/off state of a microphone.

However, Kodama teaches determine information about on/off state a microphone . (see col. 5 line 25-col.6 line 39).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Kodama into Nevins to provide a detects the microphone on/off state for friendly use.

Consider claim 2, there is the method claim corresponding to apparatus claim 14. See previous apparatus claim 14 rejection.

Consider claim 15, Nevins teaches the apparatus of a computer readable storage medium further having executable instructions that enable the computer to:

performing detection of signal clipping (see col.4 line 25-col.5 line 35).

Consider claim 4, there is the method claim corresponding to apparatus claim 15. See previous apparatus claim 15 rejection.

5. Claims 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nevins (US PAT. 5,949,886) as modified by Kodama (US PAT. 6,249,275) as applied to claims 2 and 14 above, and further in view of Anderson (US PAT. 5,714,997).

Consider claim 16, Nevins and Kodama teach the apparatus of the computer-readable storage medium having executable instructions that enable the computer to determine information about an on/off state of a microphone by comparing said signal to a threshold value to determine the on/off state of said microphone further comprises executable instructions that enable the computer to, but Nevins and Kodama do not



Art Unit: 2643

clearly teach to calculate the RMS value of said signal; and compare said RMS value to a threshold value to determine the on/off state of said microphone.

However, Anderson teaches to calculate the RMS value of said signal; and compare said RMS value to a threshold value to determine the sound to be arriving at a microphone (see col.30 lines 33-50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Anderson into Nevins as modified by Kodama to provide processing the received audio signals to estimate, for individual periods of time, spatial points from which individual ones of the sounds emanate, and audio signals of the individual ones of the sound; and generating the encoded data to include the spatial points and the audio signal.

Consider claim 10, this is the method claim corresponding to apparatus claim 16. See claim 16 for rejection.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:(703) 872-9306

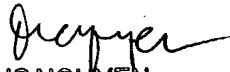
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington.  
VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (703) 305-2259 The examiner can normally be reached on Monday-Friday from 8:00 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz, can be reached on (703) 305-4708.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (703) 306-0377.

Lao, Lun-See  
Patent Examiner  
US Patent and Trademark Office  
Crystal Park 2  
(703305-2259)

  
DUC NGUYEN  
PRIMARY EXAMINER